

Computerized Reminders for Syphilis Screening in an Urban Emergency Department

Marc Rosenman, MD, Jane Wang, PhD, Paul Dexter, MD, J. Marc Overhage, MD, PhD
Departments of Pediatrics and Medicine

Indiana University School of Medicine and Regenstrief Institute, Indianapolis, IN

Abstract

Point of care reminders have been shown to be effective in changing ordering behavior in primary care settings, but electronic reminders in the emergency department have not been studied. We retrospectively evaluated a computerized system designed to prompt syphilis testing in an emergency department during an outbreak. Most individual reminders were not followed by a test. However, there was a marked general increase in syphilis testing.

Introduction

Computerized reminders at the point of care have been shown to be effective in changing physicians' ordering behavior in primary care settings, but there are no studies about the use of electronic reminders in the emergency department for public health purposes.

At the peak of an outbreak in 1999, the reported syphilis rate in Marion County, Indiana was 50 cases per 100,000 persons. The Marion County Health Department, in response to the outbreak, intervened in a number of ways designed to foster improved prevention, screening, and detection of syphilis. We implemented computerized reminders in a large urban emergency department (ER), including its affiliated Urgent Visit Center (UVC) and Women's Visit Center (WVC)—locations where many patients at risk for syphilis receive care.

Methods

Physicians in the ER/UVC/WVC use the Medical Gopher to write release orders (and prescriptions), requests for follow-up appointments, and orders for diagnostic tests. A reminder to consider ordering a syphilis test was issued if the patient lived in a four zip code high-prevalence area, or, when the zip code was not one of the four, if there was a history of IV drug abuse. No reminder was issued if a syphilis test had been obtained within the preceding 60 days.

To assess the effect of the reminders on syphilis screening, we extracted data from the Regenstrief Medical Records System (RMRS). In a before-after design, a cohort was created of all patients who visited the ER/UVC/WVC between 1/1/1999 and 12/31/2001 (the reminder system began operating on 9/14/1999). A subset, the patients for whom a reminder was generated, also was studied. All syphilis tests were extracted from RMRS. An exact-date matching (test and visit) algorithm was applied: Tests performed on the same date as an ER/UVC/WVC visit were assumed to have been ordered in those locations, and, after 9/14/1999, to have been ordered in response to a reminder.

Results

From 1/1/1999 to 12/31/2001, there were 350,542 visits for 140,473 patients in the ER/UVC/WVC. These patients had a total of 7346 syphilis tests in the 8½ months before reminders began appearing, 8958 tests in the 8½ months after 9/14/1999, and almost 10,000 in the subsequent 8½ months. From 9/14/1999 to 12/31/2001, there were 272,461 visits; a reminder was issued at 61,352 (22.5%), for 29,404 patients and 770 clinicians. Almost all reminders (98.9%) were generated by the patient's zip code.

Among the 61,352 visits at which a reminder was issued, 1693 (2.8%) had a syphilis test on the same date. (These 1693 visits involved 1558 patients and 318 clinicians.) The 1693, compared to the 61,352, involved younger patients (mean 30 vs. 38 years old) and a higher proportion of women (65% vs. 58%).

Test results were analyzed; the 1693 prompted tests included 59 (3.5%) that were a patient's first reactive test during the study period. These 59 test-visit date-matches represented 0.1% of all 61,352 visits at which a reminder was issued.

In the set of 29,404 patients for whom a reminder was generated at any point during the study period, we compared the 8½ months before and after 9/14/1999. During the 8½ months after 9/14/1999, the patients who visited during that time interval had 566 syphilis tests obtained in response to reminders; those who visited during the 8½ months before reminders began had 513 syphilis tests on dates of ER/UVC/WVC visits > 60 days after a previous test.

Clinicians varied in how frequently they responded to reminders by obtaining tests (minimum 0%, maximum 36%, mean 2.8%, and median 1.6% among clinicians reminded = 25 times).

Conclusion

Syphilis screening increased after computerized reminders were implemented, though most individual reminders were not followed by a syphilis test. The presence of reminders may have worked indirectly to promote syphilis test ordering in the ER.